LUMMI NATION
SPILL PREVENTION AND RESPONSE CAPABILITY DEVELOPMENT

2013 Annual Synthesis Report

Prepared For:
Lummi Indian Business Council

Prepared By:
Water Resources Division
Lummi Natural Resources Department

January 2014

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Introduction

Large amounts of crude oil, petroleum products, and other hazardous materials are transported and stored near the Lummi Indian Reservation (Reservation). These hazardous materials are transported by ships, pipelines, trucks, and railroad and are used, produced, and/or stored throughout the Reservation area, particularly in the Cherry Point Heavy Impact Industrial Zone immediately north of the Reservation boundary. Accidents, equipment failure, and human error have the potential to result in large spills and disastrous human and environmental consequences. Many of these hazardous materials are toxic to people and animals if inhaled or contacted. Oil and chemical spills or releases to waters on or adjacent to the Reservation have the potential to threaten public health and safety and destroy some of the most productive and valuable ecosystems in the world. Spills or releases of petroleum products, chemicals, or other hazardous materials to land can threaten public safety, public health, and the environment. To date, there has not been a large hazardous material spill on the Reservation that has impacted Lummi Nation Waters. However, future residential and economic growth on the Reservation, in the adjacent Cherry Point Heavy Impact Industrial Zone, and in areas upstream from the Reservation will increase the risk of a hazardous material emergency on the Reservation.

Because of the potential consequences, it is important for the Lummi Nation to develop and implement a plan to effectively respond to a hazardous material spill or release on or adjacent to the Reservation. The Lummi Natural Resources Department has been actively developing spill response capabilities since the mid-1990s and completed the Lummi Nation Spill Prevention and Response Plan in October 2005 (LWRD 2005). Continuing efforts to develop spill prevention and response capabilities include staff training and spill response drills, equipment upgrades, planning, research, and public outreach. These efforts contribute to achieving the Lummi Nation goals of protecting the public health and safety of Reservation residents and protecting treaty rights to fish and gather throughout all usual and accustomed areas. These activities also contribute to achieving the EPA strategic goals of clean and safe water and healthy communities and ecosystems.

This annual synthesis report is a summary of the Lummi Nation spill prevention and response capability development activities conducted during the January 1, 2013 through December 31, 2013 period. The activities are divided into the following categories: Staff Training and Oil Spill Response Drills, Equipment, Oil Spill Response Incidents, Public Outreach, and Data Collection/Research.

Spill Prevention and Response Capability Development Activities

1. Staff Training and Oil Spill Response Drills:

Spill prevention and response training for staff members is conducted through both dedicated classes and through table-top and boom deployment exercises. The staff members identified below attended the following training programs, workshops, or oil spill response drills during 2013. Agendas or lists of training topics that were transmitted to the EPA as part of semi-annual progress reports are not being transmitted as part of this annual synthesis report.

a) On April 16, 2013, Jeremy Freimund (Water Resources Manager) and Victor Johnson (Natural Resources Specialist) participated in an Oil Sands Products Forum facilitated by the Center for Spills in the Environment (University of New Hampshire) and held at the NOAA Sand Point office.
b) On June 6, 2013, Jeremy Freimund and Hilary Cosentino (Water Resources Technician III) participated in the Phillips 66 Average Most Probable Discharge Table Top Exercise at the Phillips 66 refinery.
c) On July 15, 2013, Kara Kuhlman (Natural Resources Analyst) completed two independent study courses, "Introduction to the Incident Command System, ICS-100 (IS-00100.b)" and "National Incident Management System (NIMS), An Introduction (IS-00700.a)", offered by FEMA's Emergency Management Institute.
d) On October 23, 2013, 17 members of the Lummi Natural Resources Department (LNR) and the Lummi Nation Police Department (LNPD), 1 employee of Marine Spill Response Corporation (MSRC), and 1 employee of Whatcom County Division of Emergency Management (DEM) conducted a half-day oil spill response drill with boom deployment at Fish Point (NPS-18). Attendees: See attached memorandum.
e) On November 5, 2013, 14 members of the LNR and the LNPD, 1 employee of MSRC, and 1 employee of Whatcom County DEM conducted a half-day oil spill response drill with boom deployment in Portage Bay. Attendees: See attached memorandum.
f) On November 8, 2013, Victor Johnson and Kara Kuhlman participated as the Tribal On-Scene Coordinator and Deputy Tribal On-Scene Coordinator in the Cherry Point Refinery 2013 Worst Case Discharge Exercise hosted by the BP Cherry Point Refinery and held at the Emergency Operations Center near the Bellingham Airport. Jeremy Freimund served as their advisor.
g) On December 12, 2013, 6 members of the LNR and Cultural Department observed an oil spill response drill with boom deployment at Sandy Point (NPS-11) hosted by Phillips 66. Attendees: See attached sign-in sheet.

2. Equipment:

a) LNR offices and oil spill response equipment were moved to the new Tribal Administration Building located at 2665 Kwina Rd., Bellingham, WA 98226.
b) Routine maintenance of the MV Responder and trailer included replacing the Plexiglas on the port-side window of the cabin windshield, reinforcing the transom and swim deck, resurfacing the trailer struts, servicing the engine, and purchasing new boat plugs and a compass.
c) Routine maintenance of the MV Harborcraft and trailer included replacing and resurfacing the trailer struts, replacing the trailer winch and cable, and replacing the alligator clamps for the bilge pump battery.
d) Routine maintenance of the 2010 Nissan Titan included purchasing new tires and replacing the rear rotors and brake pads.
e) New or replacement hip waders, chest waders, wading boots, and rain gear were purchased for three LNR staff members.

3. Oil Spill Response Incidents:

a) On October 15, 2013, Water Resources Division (WRD) staff responded to what was later determined to be a fish oil spill that originated from Barlean's Organic Oils LLC at the intersection of Slater Road and Lake Terrell Road. The WRD staff deployed absorbent pads and sausage boom to help absorb and contain the spill. Barlean's Organic Oils LLC took responsibility for the spill and spill clean-up. See attached memorandum.

4. Public Outreach:

The oil spill prevention and response activities were publicized in the community through articles in the Lummi Nation monthly newspaper (*Squol Quol*). *Squol Quol* articles are available at the Lummi Nation Communication Department website (http://www.lummi-nsn.org/website/dept_pages/communications/communi_home.shtml).

a) The June 6, 2013 Phillips 66 Average Most Probable Discharge Table Top Exercise was reported in the July edition of the *Squol Quol*.
b) The October 15, 2013 Barlean's Fish Oil Spill and the October 23, 2013 Fish Point Oil Spill Response Drill (NPS-18) were reported in the November edition of the *Squol Quol*. A poster with images of the Fish Point Oil Spill Response Drill and excerpts of the Geographic Response Plan (GRP) is on display in the LNR office and was also provided to the LNPD.

c) The November 5, 2013 Portage Bay Oil Spill Response Drill and the November 8, 2013 BP Cherry Point Refinery 2013 Worst Case Discharge Exercise were reported in the December edition of the *Squol Quol*. A poster with images of the Portage Bay Oil Spill Response Drill is on display in the LNR office and was also provided to the LNPD.

Results of the boom deployment drills conducted on October 23, 2013 and November 5, 2013 were summarized in the Region 10 Regional Response Team and the Northwest Area Committee (RRT/NWAC) NW Area Contingency Plan (http://www.rrt10nwac.com/nwacp/) section on Geographic Response Plans (http://www.rrt10nwac.com/GRP/FieldReports.aspx).

Information about oil spill prevention and response capabilities (e.g., training logs, emergency contact information, equipment list, and the Unified Command Structure for the Lummi Natural Resources Department) are published on the Water Resources Division page of the Lummi Natural Resources Department website (http://lnnr.lummi-nsn.gov/LummiWebsite/Website.php?PageID=67) and regularly updated.

5. Data Collection/Research:

The Lummi Natural Resources Department staff regularly conducts data collection activities and research in support of the overall departmental mission to protect and restore tribal natural resources. These data collection/research activities support the goals of the oil spill prevention and response capability development by documenting background and ambient conditions. This information will be useful in evaluating the effectiveness of response efforts in the event of an oil spill and to protect public health and safety.

In addition, the Lummi Water Resources Division has conducted a number of activities that support efforts to prevent and respond to spills including developing and adopting water quality standards, storm water management regulations, and regulations that identify civil fines for activities that negatively impact Lummi Nation Waters.

Although some of these data collection/research and related activities are funded through the EPA (e.g., the ambient water quality monitoring program), other data collection and research activities are supported through other funding sources. Data collection/research activities conducted during 2013 that were focused on quantifying the tribal natural resources on tribal tidelands included the annual Manila Clam Stock Assessment Survey for 2013, which was conducted in Lummi Bay, Portage Spit, Brant Flats, and Brandt Island.

Reference:

Lummi Water Resources Division (LWRD). 2005. Oil Spill Prevention and Response Plan. Prepared for the Lummi Indian Business Council. October.

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ATTACHMENTS

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Emergency Management Institute

FEMA

This Certificate of Achievement is to acknowledge that

KARA D KUHLMAN

has reaffirmed a dedication to serve in times of crisis through continued professional development and completion of the independent study course:

IS-00700.a
National Incident Management System (NIMS)
An Introduction

Issued this 15th Day of July, 2013

0.3 IACET CEU

Tony Russell
Superintendent
Emergency Management Institute

Emergency Management Institute

FEMA

This Certificate of Achievement is to acknowledge that

KARA D KUHLMAN

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IS-00100.b
Introduction to Incident Command System
ICS-100

Issued this 15th Day of July, 2013

Tony Russell
Superintendent
Emergency Management Institute

0.3 IACET CEU

INTEROFFICE MEMORANDUM

TO: MERLE JEFFERSON SR., EXECUTIVE DIRECTOR
LEROY DEARDORFF, ENVIRONMENTAL PROGRAM DIRECTOR
JEREMY FREIMUND, WATER RESOURCES MANAGER

FROM: KARA KUHLMAN, NATURAL RESOURCE ANALYST

SUBJECT: **OCTOBER 23, 2013 FISH POINT OIL SPILL RESPONSE DRILL (NPS-18)**

DATE: 10/23/13

CC: RON TSO, CHIEF OF POLICE

The purpose of this memorandum is to summarize the spill drill that took place on October 23, 2013.

Participants:

The following staff and guests participated in the drill:

1. Frank Lawrence III, LNR Natural Resources Specialist I
2. Jamie Mattson, LNR Water Resources Specialist II
3. Victor Johnson, LNR Natural Resources Specialist I
4. Hilary Cosentino, LNR Water Resources Technician III
5. Kara Kuhlman, LNR Natural Resources Analyst
6. Nicholas Kunkel, LNR Salmon Harvest Sampling Biologist
7. Chris Phair, LNR Watershed Restoration Technician II
8. Don Kruse, LNR Project Biologist
9. Ralph Phair, LNR Field Technician
10. Tommy Beggs, LNR Field Technician
11. Michael Williams, LNR Field Technician
12. Jesse Cooper, LNR Field Technician
13. Officer David Savage, LNPD
14. Officer Jay Martin, LNPD
15. Sergeant Edward Conway, LNPD
16. Officer Aaron Hillaire, LNPD
17. Officer Gary James , LNPD
18. Ken Schacht, Marine Spill Response Corporation (MSRC)
19. Frances Burkhart, Whatcom County Division of Emergency Management

Drill Strategy:

The exercise was a half-day oil spill response drill with boom deployment. The goal of the drill was to deploy boom strategy NPS-18 of the Geographic Response Plan (GRP) for the North Puget Sound (NPS) region (see attached diagrams). NPS-18 calls for deflection boom to be placed at an angle across the downstream end of Kwina Slough to prevent oil moving downstream from entering Bellingham Bay.

Drill Goals:

1. Test NPS-18.
2. Test accessibility of site for the boom trailer.
3. Practice teamwork.

Briefing and Scenario:

During the pre-deployment briefing meeting held in the 2nd Floor South Conference Room in the Tribal Administration Building, Frank outlined the scenario for the day and addressed each of the agenda items. In the scenario, a Kinder-Morgan pipeline has broken in the Ten Mile Creek Watershed. Merle Jefferson is at the Emergency Operations Center and is the Tribal On-Scene Coordinator in the Unified Command. The Unified Command has directed that NPS-18 be deployed. Frank is the Operations Section Supervisor.

Briefing Agenda:

1. Check-In and Introductions
2. Scenario Briefing
3. Incident Command System (ICS) Review
4. Safety Briefing (Air Quality , PFDs, Bees, Hydration, Buddy System)
5. Staff Assignments
6. Questions/Comments

Tide Predictions (Bellingham Bay Station) for October 23, 2013:
Low Tide: 2:06 am, -0.4 ft
High Tide: 9:52 am, 8.4 ft
Low Tide: 3:18 pm, 5.8 ft
High Tide: 7:25 pm, 7.0 ft

To access Kwina Slough, boats were launched at Native American Shellfish Company. The boom trailer was parked at the end of the unpaved access road located immediately south of Native American Shellfish Company.

Timeline:

Table 1 summarizes the spill drill events.

Table 1: Timeline of the October 23, 2013 Oil Spill Response Drill

Time	*Event*
9:33 am	Pre-deployment meeting with explanations of drill scenario and goals, ICS review, safety briefing, and job assignments.
9:55 am	Pre-deployment meeting ends.
10:05 am	The Police Boat leaves the Maintenance Building parking lot. Time estimated.
10:15 am	The Police Boat arrives at Native American Shellfish. Time estimated.
10:19 am	The Police Boat launches.
10:20 am	The boom trailer and Harborcraft leave the Maintenance Building parking lot.

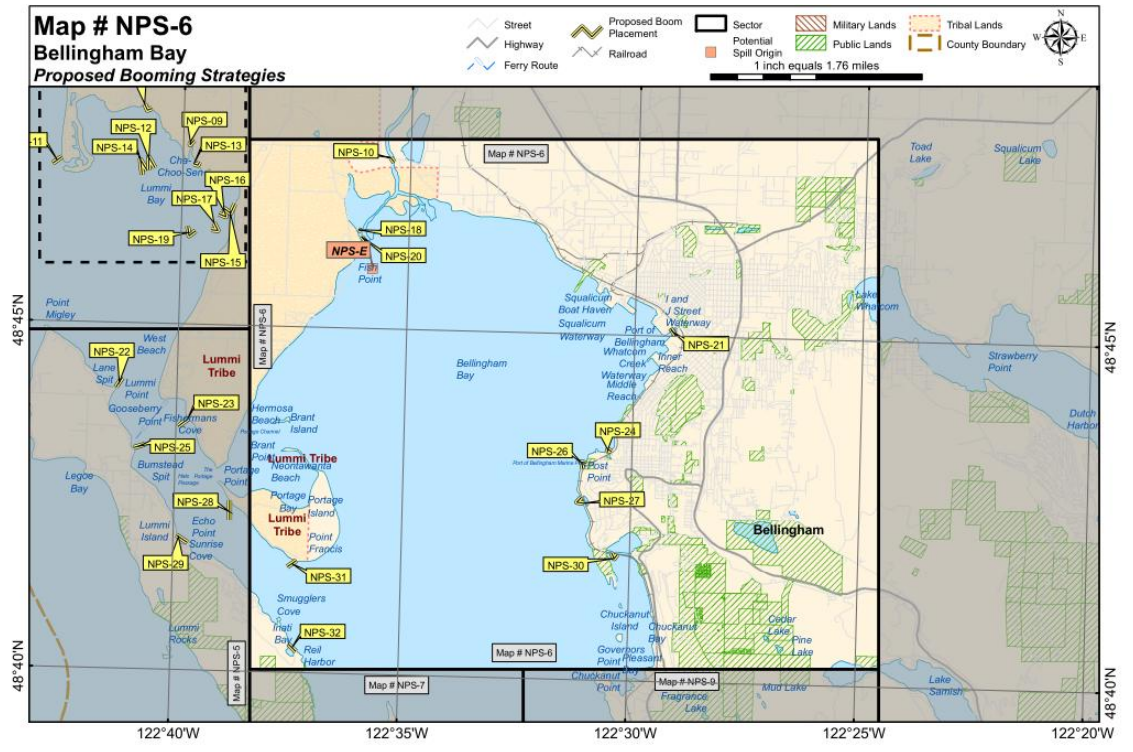
10:24 am	The Police Boat arrives at deployment site.
10:27 am	The Harborcraft arrives at Native American Shellfish.
10:29 am	The Harborcraft launches.
10:33 am	The Harborcraft arrives at deployment site.
10:34 am	The boom trailer arrives at deployment site.
10:40 am	Boom deployment begins.
11:09 am	Boom is deployed. Frank calls meeting to discuss boom strategy.
11:19 am	Boom reloading begins.
11:24 am	Police Boat departs from drill.
11:32 am	Boom reloaded onto the trailer.
11:40 am	Harborcraft recovered.
11:43 am	Boom trailer arrives at Maintenance Building parking lot.
11:47 am	Harborcraft arrives at Maintenance Building parking lot.
12:03 pm	Lunch and de-briefing.
12:50 pm	End of drill.

Results:

The following are "lessons learned" and recommendations resulting from the drill:

- Despite low river discharge (1,350 ft^3/s), the river current was stronger than could be maintained by the boom and entrainment of water under the boom was evident. Ken Schacht (MSRC) recommended deploying two booms at this site: an upstream boom to deflect oil and slow the current and a downstream boom to deflect oil and provide a pocket for oil collection. Additionally, it was difficult for one boat to tow the boom upstream and against the current. Boom towing and anchoring on the right bank was eventually accomplished with the Police Boat and Harborcraft working together.
- More time was needed for this drill. Frank recommended a full-day drill to find the best deployment method. A full-day drill would also give responders an opportunity to address how the boom strategy would need to change with the changing tides.
- It was difficult to find suitable anchor points for the deflection boom. Ken Schacht (MSRC) demonstrated a method for building anchor points using three T-posts and two tension lines (see attached photographs). Installing this type of anchor on both sides of Kwina Slough would require additional T-posts. A jack or shovel for removing T-posts would be helpful. Also, moving the boom between anchor sites, which would be likely in the event of a spill, was difficult and required at least five staff. A come-along cable puller could be useful in this situation, particularly under conditions where the current is stronger or less staff are available.
- The boom deployment site was accessible to the boom trailer at the time, but may be too soft during wetter conditions or for heavier equipment (e.g., a loaded Vacuum Truck). Frank recommended adding gravel to harden the access road.
- Some spill response equipment needs to be replaced or repaired. Hilary suggested that the Water Resources Division Nissan Titan needs new tires. Don noticed that the boom trailer's right, rear hazard light needs to be fixed.

- Because the Harborcraft and boom trailer are parked side-by-side in the Maintenance Building parking lot, it would save time to have their hitches accessible on opposite rows so the trailers could be loaded simultaneously.



North Puget Sound (NPS) GRP, Version 1.00 4-22

General | Overview Map | Priorities | Sector Map | Matricies | Access | Strategy | Staging

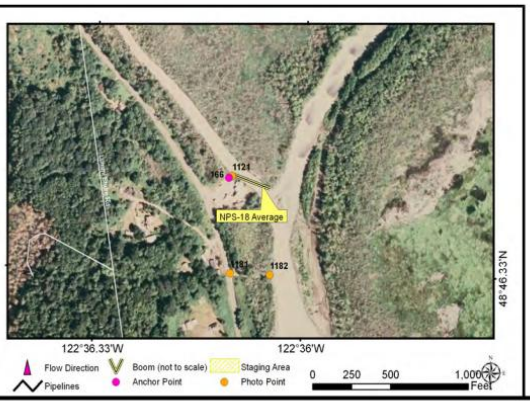
4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-12: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
NPS-18	Visited and Not Tested 07/30/2008	**Kwina Slough (S entrance)** **N 48° 46.409'** **W 122° 36.038'** **map page 4-22** **Chart #: 18424**	Exclusion, collection - Keep oil out of slough, and collect if possible.	300ft B2 - Contractor Boom	Deploy boom at an angle across south entrance to slough. Adjust angle based on spill origin point to collect at shore. Vac truck access at Native American Shellfish, 3622 Lummi Shore Road. Vac truck must remain on road or hardened surface. Contact immediately or before entering: Contact Lummi Nation, (W) 360 384-2266, (M) 360-410-1706, (H) 360 384-2225, First number is for police, second and third is for natural resources dept.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=WHA0394	salmonids (anadromous), sensitive habitat

Kwina Slough (S entrance) — NPS-18-Average — 4-108

Site Lat/Long:	N 48° 46.409' / W 122° 36.038', Sector Map NPS-6
Strategy Objective:	Exclusion, Collection - Keep oil out of slough, and collect if possible.
Implementation:	Deploy boom at an angle across south entrance to slough. Adjust angle based on spill origin point to collect at shore. Vac truck access at Native American Shellfish, 3622 Lummi Shore Road. Vac truck must remain on road or hardened surface.
Site Safety Note:	Slough can have currents due to run-off and or tidal push.
Staging Area:	Kwina Slough (S entrance), NPS-18-staging
Field Notes:	Good access off Lummi Shore Rd.. Should be able to launch small boat from Native American Shellfish, 3622 Lummi Shore Rd..
Resources Targeted:	salmonids (anadromous), sensitive habitat
Fixed Anchors:	166: N 48° 46.427' / W 122° 36.120', shore near shellfish company, adjust as needed
Watercourse Description:	Slough



Suggested Equipment	
Quantity	**Description**
300 ft	B2 - Contractor Boom
4 each	Stake(s)
1 each	Work Boat(s)
Suggested Personnel	
1	Boat Operator (s)
1	Laborer (s)

Status: Visited and Not Tested 07/30/2008

Kwina Slough (S entrance) — NPS-18-Average — 4-109

Image-1121: Anchor point near ramp.

No Image Available

Site Contact Information

High Priority - contact immediate or before entering:
Contact Lummi Nation, (W) 360 384-2266, (M) 360-410-1706, (H) 360 384-2225, First number is for police, second and third is for natural resources dept.

Closest Address:

Driving Directions:

Cannot Drive to Site

Police Boat Launches

Harborcraft Launches

Boom Deployment Begins

Boom Deployment Continues

Boom Deployment Continues

T-Post Anchor Point

Boom Transferred Between Anchor Points

Boom Deployment Complete (300 ft)

Boom Deployment Complete (300 ft)

Boom Deployment Complete (300 ft)

Boom Reloading

Boom Reloading

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INTEROFFICE MEMORANDUM

TO: MERLE JEFFERSON SR., EXECUTIVE DIRECTOR
LEROY DEARDORFF, ENVIRONMENTAL PROGRAM DIRECTOR
JEREMY FREIMUND, WATER RESOURCES MANAGER

FROM: KARA KUHLMAN, NATURAL RESOURCE ANALYST

SUBJECT: **NOVEMBER 5, 2013 PORTAGE BAY OIL SPILL RESPONSE DRILL**

DATE: 11/6/13

CC: RON TSO, CHIEF OF POLICE

The purpose of this memorandum is to summarize the spill drill that took place on November 5, 2013.

Participants:

The following staff and guests participated in the drill:

1. Jeremy Freimund, LNR Water Resources Manager
2. Frank Lawrence III, LNR Natural Resources Specialist I
3. Jamie Mattson, LNR Water Resources Specialist II
4. Victor Johnson, LNR Natural Resources Specialist I
5. Hilary Cosentino, LNR Water Resources Technician III
6. Kara Kuhlman, LNR Natural Resources Analyst
7. Gregg Dunphy, LNR Timber, Fish, and Wildlife Manager
8. Don Kruse, LNR Stock Assessment Biologist
9. Chris Phair, LNR Watershed Restoration Technician II
10. Officer David Savage, LNPD
11. Officer Jay Martin, LNPD
12. Sergeant Edward Conway, LNPD
13. Officer Aaron Hillaire, LNPD
14. Officer Gary James , LNPD
15. Peter Marcus, Marine Spill Response Corporation (MSRC)
16. Kent Catlin, Whatcom County Division of Emergency Management

Drill Strategy:

The exercise was a half-day oil spill response drill with boom deployment. The goal of the drill was to practice the strategy intended protect shellfish beds in Portage Bay from a potential oil spill in Bellingham Bay. The drill called for open-water entrapment and recovery of spilled product, requiring a “U-shaped” boom strategy for product entrapment and a “donut-shaped” boom strategy for product recovery. This strategy is not listed in the current Geographic Response Plan (GRP) for the North Puget Sound (NPS) region, but the deployment area is located just north of Brant Island in Portage Bay and can be seen in the NPS-6 map of boom deployment strategies in Bellingham Bay (see attached diagram). This strategy replaced NPS-21 (boom extending from Brandt Island to the Lummi Peninsula) and NPS-22 (boom extending

from Brandt Island to Brandt Point) from the March 2003 GRP, which were both determined to be unworkable.

Drill Goals:

1. Ensure the safety of response personnel.
2. Test Portage Bay protection boom deployment strategy.
3. Test capacity of the Responder and the Bram to carry boom.
4. Test accessibility of site for the boom trailer.
5. Determine the time required to ferry boom around Portage Island.
6. Practice teamwork.

Briefing and Scenario:

During the pre-deployment briefing meeting held in the 2nd Floor South Conference Room in the Tribal Administration Building, Jeremy outlined the scenario for the day and addressed each of the agenda items. In the scenario, a spill has occurred in Bellingham Bay as a result of a tug boat collision with an oil-laden barge at anchor and is moving toward Portage Bay. Merle Jefferson is at the Emergency Operations Center and is the Tribal On-Scene Coordinator in the Unified Command. The Unified Command has directed that the Portage Bay boom deployment strategy be deployed.

Briefing Agenda:

1. Check-In and Introductions
2. Scenario Briefing
3. Incident Command System (ICS) Review
4. Safety Briefing (Air Quality , PFDs, Bees, Hydration, Buddy System)
5. Staff Assignments
6. Questions/Comments

Tide Predictions (Bellingham Bay Station) for November 5, 2013:
High Tide: 6:57 am, 8.9 ft
Low Tide: 11:56 am, 5.7 ft
High Tide: 4:52 pm, 8.4 ft

To access Portage Bay, the Responder and the Bram (small Police Boat) were launched at Boat Access Point (BAP) 11 located on Lummi View Drive at the southern end of the Lummi Peninsula. The Lengesot (large police boat) was deployed from its moorage at Squalicum Harbor.

The boom trailer was parked at BAP 11 for boom unloading and loading onto the two boats, but was parked along Lummi Shore Rd. just south of Dana Wilson's house (2411 Lummi Shore Rd.) for boom recovery.

Timeline:

Table 1 summarizes the spill drill events.

Table 1: Timeline of the November 5, 2013 Oil Spill Response Drill

Time	*Event*
9:30 am	Pre-deployment meeting with explanations of drill scenario and goals, ICS review, and safety briefing.
10:11 am	Pre-deployment meeting ends.
10:16 am	The Bram leaves the Maintenance Building parking lot. Time estimated.
10:36 am	The Responder leaves the Maintenance Building parking lot.
10:45 am	The boom trailer leaves the Maintenance Building parking lot.
10:46 am	The Bram arrives at BAP 11 and launches. Time estimated.
10:49 am	The Responder arrives at BAP 11. The Lengesot deploys from Squalicum Harbor.
10: 56 am	The Responder launches.
11:03 am	The boom trailer arrives at BAP 11.
11:06 am	Boom loading onto the Bram (300 ft) and the Responder (500 ft) begins.
11:18 am	Boom loading is complete.
11:19 am	Lengesot arrives at BAP 11.
11:28 am	Boats depart BAP 11.
11:45 am	Boats arrive at boom deployment site.
11:46 am	Boom deployment begins.
12:28 pm	Boom deployment complete, the Responder and the Bram tow boom to shore. Lengesot departs from drill.
12:45 pm	Boom reloading begins.
1:02 pm	Boom reloaded onto the trailer complete.
1:23 pm	Responder recovered at BAP 11. The Bram departs from drill.
1:40 pm	Responder and boom trailer arrive at Maintenance Building parking lot.
1:55 pm	Lunch and de-briefing.
2:36 pm	End of drill.

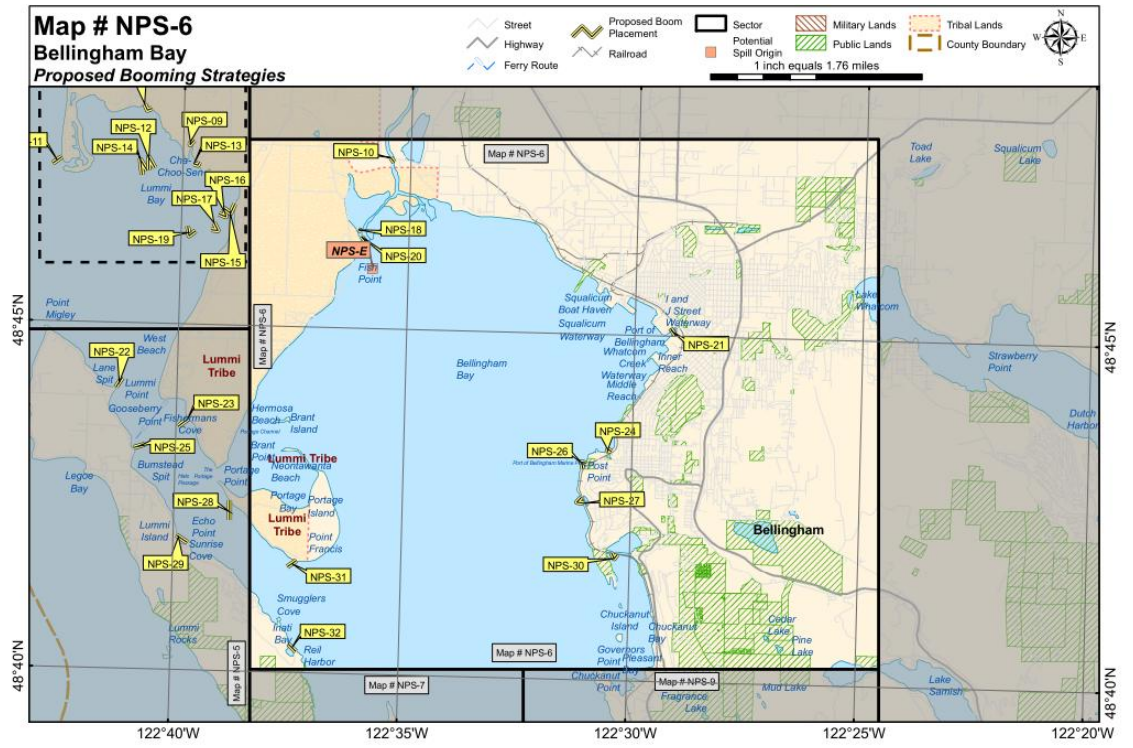
Results:

The following are "lessons learned" and recommendations resulting from the drill:

- The Responder can carry at least 500 ft of boom and the Bram can carry at least 300 ft of boom under good conditions (e.g., low wind, low waves, high visibility). With boom, the travel time between BAP 11 and the boom deployment site is nearly twenty minutes.
- U-shaped boom deployment (400 ft) for on-water collection was successful. It proved important that the boom endplates be kept parallel to reduce tension on the boom. Ensuring adequate communication between boat operators to keep endplates parallel could be improved with the use of walkie-talkies and compasses. "Donut-shaped" boom deployment for on-water recovery was successful. This strategy requires a minimum of 400 ft of boom.
- The Portage Bay launch site worked well for launching the Responder and the Bram and unloading the boom trailer. Another site was located for boom recovery on Lummi

Shore Rd. just south of Dana Wilson's house (2411 Lummi Shore Rd.). This site on Lummi Shore Rd. could also be used for boom deployment.

- A Spill Response 101 course would be helpful for learning spill response technology and strategy. Pursue MSRC for education options.
- Carrying a basic toolbox would be helpful. For example, the boom trailer gate has morphed such that using the pins to lock the gate is difficult; using a hammer rather than a rock would be safer and easier for securing the pins.



Briefing Meeting

Boom Unloading Begins

300 ft Boom Loaded on the Bram

500 ft Boom Loaded on the Responder

Boom Deployment Begins

“U-shaped” Boom Deployment (400 ft)

"U-shaped" Boom Deployment (400 ft)

Boom Coupling

"Donut-shaped" Boom Deployment (400 ft)

"Donut-shaped" Boom Deployment (400 ft)

INTEROFFICE MEMORANDUM

TO: MERLE JEFFERSON SR., EXECUTIVE DIRECTOR
LEROY DEARDORFF, ENVIRONMENTAL PROGRAM DIRECTOR
JEREMY FREIMUND, WATER RESOURCES MANAGER

FROM: KARA KUHLMAN, NATURAL RESOURCE ANALYST

SUBJECT: **NOVEMBER 8, 2013 BP CHERRY POINT REFINERY WORST CASE DISCHARGE DRILL**

DATE: 12/2/13

CC:

The BP Cherry Point Refinery in Blaine, WA hosted the BP Cherry Point Refinery 2013 Worst Case Discharge Exercise on November 8, 2013. The spill drill simulated a crude oil spill of 40,000 barrels at the Cherry Point Dock. The spill drill was conducted at the Emergency Operations Center near the Bellingham Airport.

Three Water Resources Division staff participated in the drill. Victor Johnson, Natural Resources Specialist I, served as the Tribal On-Scene Coordinator (TOSC) in the Unified Command, Kara Kuhlman, Natural Resources Analyst, served as the Deputy TOSC, and Jeremy Freimund, Water Resources Director, served as their advisor.

Attached is the Exercise Plan.

BP CHERRY POINT REFINERY

EXERCISE PLAN

BELLINGHAM, WA

November 08, 2013

NJ Resources

www.njr.net

TABLE OF CONTENTS

1.0 EXERCISE OVERVIEW

1.1 Exercise Concept

The exercise is a one-day, Command Post Style exercise of a Worst Case Discharge intended to simulate the first 12-hour shift of one 24-hour operational period. The exercise will be conducted at the former Olympic Coordination Center in Bellingham, Washington. The scenario is based on a catastrophic break in the Marine Line, a 30" crude line running to the Dock, just upstream of the onshore valve which results in unrestricted flow of Alaska North Slope (ANS) crude from Tank 50 within the Cherry Point Tank Farm, located approximately 1.5 miles inland, to the beach at the base of the Cherry Point Dock, and into the Strait of Georgia. Participants will include the BP Cherry Point IMT, BP response contractors and specialists, federal and state agencies, local governments, and nongovernmental organizations.

The exercise will begin on the morning of Friday, November 8th, 2013 at 0800 hours (which is approximately 4 hours into the response) with an Incident Briefing on the ICS 201 prepared during the initial response. The IMT will proceed with initial response activities while progressing towards the development of an Incident Action Plan (IAP) for the second Operational Period. The goal of this exercise is to complete the preparation for Tactics work period and be ready for the Tactics Meeting, or possibly actually conduct the Tactics Meeting.

1.2 Scenario Summary

A catastrophic break in the Marine Line, a 30" crude line running to the dock, just upstream of the onshore valve results in unrestricted flow of ANS crude from Tank 50 within the Cherry Point Tank Farm, located approximately 1.5 miles inland, to the beach at the base of the Cherry Point Dock, and into the Strait of Georgia. There are two block valves, one motor operated and one hand operated valve, which are used to isolate flow from Tank 50. For undetermined reasons, neither of these valves can be closed for a period of 45-minutes, during which time crude oil drains under hydraulic head from Tank 50 out the severed Marine Line. After 45-minutes, Cherry Point Operations is successful in blocking in Tank 50, after which the Marine Line continues to drain its static volume of approximately 15,500 barrels, resulting in a total release of 40,000 barrels of ANS crude oil to the water and immediate shoreline impacts.

PREP #	Objectives	Exercising	Comments
10.	Communications	Yes	
10.1	Internal Communications	Yes	
10.2	External Communications	Yes	
11.	Transportation	Yes	
11.1	Land Transportation	Yes	
11.2	Waterborne Transportation	Yes	
11.3	Airborne Transportation	Yes	
12.	Personnel Support	Yes	
12.1	Management	Yes	
12.2	Berthing	Yes	
12.3	Messing	Yes	
12.4	Operational/Admin spaces	Yes	
12.5	Emergency Procedures	Yes	
13.	Equipment Maintenance & Support	Yes	
13.1	Response Equipment	Yes	
13.2	Response Equipment (Support)	Yes	
14.	Procurement	Yes	
14.1	Personnel	Yes	
14.2	Response Equipment	Yes	
14.3	Support Equipment	Yes	
15.	Documentation	Yes	

An evaluation team will monitor and document how well the Vessel Response Plan worked in the drill and the IMT's performance in implementing ICS processes.

2.2 Exercise Limitations

As reflected in the PREP objectives table above, the issues below have been excluded and **will not be exercised**:

- Incident Cause/investigation
- Marine Firefighting
- Source Control
- Security in terms of Terrorism
- Natural Resource Damage Assessment (NRDA)
- Volunteers
- Social Media

Tribal Nations

- Lummi Nation

Contractors

- BAI Environmental
- Global Diving and Salvage (GDS)
- Islands' Oil Spill Association (IOSA)
- Marine Spill Response Corporation (MSRC)
- National Response Corporation (NRC)
- NJ Resources, Inc. (NJR)
- Resource Security Services, Ins. (RSSI)
- The Response Group (TRG)

4.0 LOGISTICS

4.1 Incident Command Post Location

The exercise will be held at the former Olympic Coordination Center located at 3888 Sound Way, Bellingham, Washington near the Bellingham Airport.

5.0 EXERCISE CONTROL FUNCTIONS AND PROCESSES

5.1 Exercise Simulation Cell (SimCell)

Exercise Simulation is being staffed to provide players with a simulation of all aspects of the external world. All of the information players would normally obtain by observation of the field or by contacting or interacting with people who are not participating in this exercise will be obtained instead through the SimCell. The reasons for this are:

- To support players in performing their job functions by ensuring they have the realistic information they would normally have in a real event,
- To ensure that all players are working with the same information, and
- To allow Evaluators to determine if processes are properly implemented.

The Exercise SimCell is also located at the Olympic facility, but outside the main Incident Command Post (ICP) spaces. Phone numbers for contacting the SimCell are provided by all the phones in the ICP.

Please keep in mind that the SimCell is NOT a substitute for information that you would normally obtain from other exercise participants. The SimCell generates only the information that you would obtain from direct observation of the field (e.g. spilled oil) or interaction with personnel who are not actually participating in the exercise (e.g. media). The following information can, and should, be obtained from Exercise Simulation.

- All IMT personnel normally located in the field, such as Staging Area Managers (the Staging Area Director is in the ICP), Field Supervisors, etc. will be located in the SimCell. If you would normally send someone to the field (i.e. Field Observers) to gather information, please contact the SimCell.
- Weather, wind, visibility, sea-states, etc. are artificial for this exercise – contact Field Supervisor in SimCell for on-scene weather, or general SimCell for area weather.
- Field Supervisors in Exercise SimCell will also provide equipment recovery rates, and other reports requested from the Field.
- Exercise SimCell will provide all information such as aerial over flight observations, operational field reporting (e.g. deployment status, actual recovery rates, booming effectiveness), actual check-in at staging, wildlife observations, etc.
    - If you plan to conduct field surveys or over flights, please inform the SimCell as soon as you schedule an over flight or other field survey, and at least one hour in advance, and be prepared to submit the over flight or survey plan (including flight plan/area to be surveyed, logistical arrangements, and

If you feel that a resource would have actually been ordered prior to the start of the drill, please just proceed to order it now and inform the SimCell.

If you feel that scripted events would have or should have been done differently, you are free to change them for the NEXT operational period, but you cannot change what was done as captured on the 201.

If there is a significant problem with your ability to proceed on this basis, please contact the SimCell.

6.0 DRILL PROCESSES

6.1 Resource Ordering

The process described below should be used for resource procurement during the drill. The process is basically the same as your normal ordering process but also provides for information to be routed to the SimCell to keep the Truth Simulation current.

- All Resource orders shall be placed using the Resource Request Form (ICS-213 RR). When these orders are filled, a hard copy of the completed resource request must be put into the Truth Inbox in the Logistics Section.
- Logistics Section reviews resource request and contacts a Vendor – either real vendors or simulated vendors in Truth per the below guidelines.
    - Tactical response-related equipment that you would normally procure through an Oil Spill Response Organization (such as boom, skimmers, vessels, storage, vehicles, aircraft, etc.) must be ordered through the Resource Desk in Truth.
    - All non-Tactical resources such as meals and hotel rooms, shall be "sourced" by actually contacting vendors as you would in a real event. **MAKE SURE THE VENDOR IS AWARE THIS IS A DRILL.** You should obtain real availability, Estimated Time of Arrival (ETA), and price information (as applicable) from contacted suppliers, but **stop short of any actual purchase or contract.** Make sure you establish that **THIS IS A DRILL** at the beginning and end of all your conversations, label **ALL** documents with **THIS IS A DRILL** and, of course, do NOT complete the purchase.

6.2 Resource Tracking

- All Staging Areas will be simulated in Truth. When resources arrive in staging, they will be reflected on ICS-211 check-in sheets coming in from the simulated Staging Area in truth.

- When vessels arrive on scene, Truth will contact the Operations Section to report their arrival and obtain further instructions.

- Operations can also contact activated resources or staging area managers in the field by contacting Truth.

- When you assign resources or change resource assignments you must complete an ICS 210 form, and the IAP software technician in Operations will enter it into the software. The entered hard copy should be put into the Truth Inbox.

- When these orders are filled, a hard copy of the completed resource request must be put into the Truth Inbox in the Logistics Section. Follow the process illustrated above.

- When resources arrive on scene, they will be reflected on 211s coming in from the simulated Staging Area also in Truth.

- The status of all ordered resources can be identified on the Resource Status Summary posted in the Situation Status Display, and/or from the Resource Unit.

- At the end of the exercise, Truth will give all white copies to the Documentation Unit Leader for archival reference.

- Logistics Section will provide a spreadsheet with the current status of all orders at the end of each operational period to UC Staff. If you have any specific questions, pleases refer to the detailed instructions on the back of the Resource Request Form.

6.3 General Message

Please use the General Message form: ICS 213 to communicate the occurrence of any significant events or decisions. Copies of the 213 form are available from the Documentation Unit.

On the 213, write your message and identify who should receive a copy. Give the completed ICS 213 to the Documentation Unit. The Documentation Unit will make copies for distribution to all Command and General Staff members, the Situation Unit, and anyone else identified for distribution on the 213.

If a reply is requested, the person who is requested to respond should be listed in the "To:" box and you should write "response requested" at the beginning of your message. The form is designed for the reply to be written on the bottom half. The form with the completed message shall then be given back to the Documentation Unit who will redistribute it all Command and General Staff members, the Situation Unit, and the Originator.

7.0 SAFETY & GROUND RULES

7.1 Exercise Safety

- Communicate any actual injury/emergency by announcing: "Attention - This is a REAL Emergency!"
- Simulated injuries must be prefaced and concluded with "This is a drill-simulated injury!"
- In the event of a serious or life threatening emergency – call ***911***.
- Keep isles and walkways clear of tripping hazards such as backpacks and other personal items. All cords must be taped down.

7.2 Exercise Ground Rules

- All communications – written and verbal - MUST begin & end with the words, "This is a drill." In addition, all written materials MUST have the word "DRILL" clearly marked on EACH PAGE, this includes anything posted in the Command Post.

APPENDIX A: ACRONYMS

ANS – Alaska North Slope (crude oil)
BART – BP Americas Response Team
BST- Business Support Team
CMT – Crisis Management Team
DEM – Department of Emergency Management
FRP – Facility Response Plan
GDS – Global Diving and Salvage
GRP – Geographic Response Plan
IAP – Incident Action Plan
IC – Incident Commander
ICP – Incident Command Post
ICS – Incident Command System
IMT – Incident Management Team
IVRP – Integrated Vessel Response Plan
JIC – Joint Information Center
LNO – Liaison Officer
MSRC – Marine Spill Response Corporation
MTSRU – Marine Transportation System Recovery Unit
NOAA – National Oceanic and Atmospheric Administration
NPS – North Puget Sound
NRC – National Response Center
NRCES – National Response Corporation Environmental Services
NRT – National Response Team
NWACP – North West Area Contingency Plan
OSRB – Oil Spill Response Barge
OSRV – Oil Spill Response Vessel
OWRG – On-Water Recovery Group
PIO – Public Information Officer
PPM – Parts Per Million
PREP – Preparedness for Response Exercise Program (National)
SKV – Skimming Vessel
TB – Tug Boat
TV – Tank Vessel
UC – Unified Command
USCG – United States Coast Guard
USCGC – United States Coast Guard Cutter
WB – Work Boat

Appendix B: Participant Feedback Form

Exercise Name: _____ **Exercise Date:** November 8, 2013

Participant Name: _____ **Title:** _____

Exercise Role: _____

Part I – Recommendations and Action Steps

1. Items you thought that went well/ Any potential Best Practices?

i.e. I thought XYZ was done really well

2. Items that were challenging/ needed improvement:

i.e. The Sitstat board wasn't updated often enough

3. Recommendations for Continuous Improvement (action items):

Based the items listed above: XYZ was done really well but to improve try ABC. XYZ was done poorly additional training around ABC would be helpful.

ConocoPhillips
TRAINING
DEVELOPMENT CENTER

Training Event Documentation Form

This form is used to provide signatures for documentation of training attendance.
Please:

- **Fill in the sheet as completely as possible**
- **Have the attendees sign the back side**
- **Attach all field check off sheets, tests, or reports.**
- **Send to**: Nona Wegers, Training Development Center.

Instructor: Rinesmith/Williams/ Shift Supervisor	**Date:** December 13	**Start Time: 08:30** **Duration: ~2 Hr**

Held: On-site ☐ Offsite ☒ (specify where): Sandy Point GRP (NPS) 11

Reason for Training: (Choose **all** that apply)

HSE Regulatory Compliance - HSE280	☐	**Classes associated with:**	
Fire Brigade Training - HSE030	☐	Initial Unit Qualifications	☐
Non-HSE Regulatory Compliance (e.g. HR Training) - HRB730	☐	Unit Refresher	☐
		Management of Change (MOC) No._____	☐
Skill Enhancement or Professional Development - HRB720	☐	Project No. _____	☐

Other: ☒ **Please explain: Oil spill deployment drill, DOE witnessed**

This is a:

Meeting or Classroom Session ☐	Drill ☒	Process Controls or Simulator Session ☐
	Field Exercise ☒	3D or other computer Model Review ☐

Weekly Emergency Drill Scenario

Pull Alarm Box or Activate General alarm

LOCATION: Dock and Sandy Point GRP (NPS) 11

Statement:

This drill; I repeat this is a drill. There has been an oil spill to water at the DOCK. I need assistance. I repeat I need assistance. This is a Drill: I repeat this is a drill. Unit 1 Do you copy?

Specific Info:

During the preparation of the South Crude line for an annual hydrostatic test a spill occurred at the Marine Terminal. The amount of oil spilled was approximately 10 bbl.'s of crude oil and distillate. The spill was due to an isolation valve that had been left in the open position (sump valve) and a check valve that was stuck in the open position in the sump line. The (malfunctioning) check valve and open isolation valve at the sump allowed product to backflow through the piping system and into the sump, overflow and subsequently enter the water. The Marine Terminal Operator found the spill after investigating a high level alarm in the sump system. The Operator communicated the incident to Supervision and secured the open valve once the appropriate PPE was donned. The Vessel Columbia was contacted via radio by MTO for spill response. Supervision made necessary notifications per ICP. Drill Starts: 0830 should last 2-3 hours.

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DEVELOPMENT CENTER

Training Event Documentation Form

The drill is a Oil Spill to Water.

Objectives:

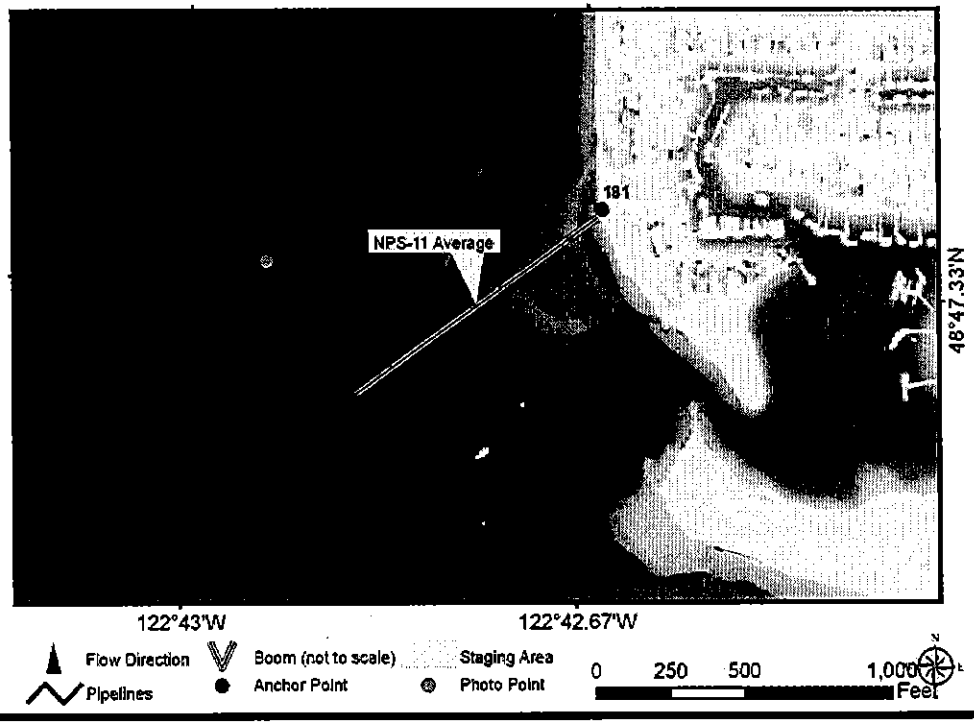
1. **Clear notification of incident**
2. **Personnel information (Medical, exposure?, anyone else involved, personnel accountability)**
3. **Establish Incident command structure (full disclosure)**
4. **Request proper Emergency Response Equipment**
5. **Initiate calls, if needed. (Refinery Personnel)(OSRO's)(SERP) (BP) (WCS) (CAN) (Env.) (911) etc.**
6. **Request additional support from personnel in Refinery**
7. **Start proper Hazmat Protocols. (SCBA's) (Hot zone, Warm Zone) (Air Monitoring)**
8. **Provide proper medical care to sick or injured.**
9. **Define objectives and tactics**
10. **Initiate response**

NOTE: .

Instructor(s) Name(s):	Date:	Training or Class Name:
Rinesmith / Shift Supervisor	December 12, 2013	Emergency Response Drill

	Signatures of Attendees:	Printed Name:	Group or Position:	Operators - Unit:
Boat crew 1.		Kara Kuhlman	Responder	LIBC
2.		Victor Johnson	Responder	LIBC
3.		Hilary Cosentino	Responder	LIBC
4.		Dena Simdarm	Responder	LIBC
5.			Responder	
6.			Responder	
7.			Responder	
8.			Responder	
9.			Responder	
10.	Robert Lyshaug		Responder	
11.	LENA TSO	LENA TSO	Responder	WMMI
12.			Responder	
13.			Responder	
14.			Responder	
15.			Responder	

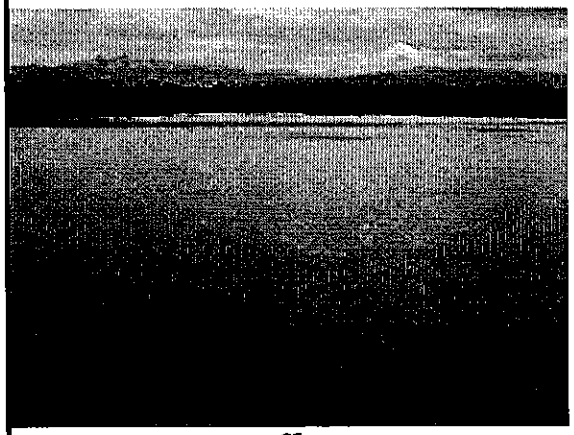
Site Lat/Long:	N 48° 47.324' / W 122° 42.756', Sector Map NPS-4
Strategy Objective:	Collection - Collect oil
Implementation:	Deploy boom from north shore of Sandy Point Shores Marina and anchor to shore for collection. Adjust angle based on real-time conditions. Depending on conditions may collect oil by boat or vac truck.
Site Safety Note:	Recreational boat traffic
Field Notes:	Site is vac truck accessible.
Resources Targeted:	resident fish, tribal lands/resources
Fixed Anchors:	181: N 48° 47.377' / W 122° 42.651', beach, adjust as needed
Watercourse Description:	Puget Sound, open area



Suggested Equipment	
Quantity	**Description**
1000 ft	B2 - Contractor Boom
1 each	Boat(s)
3 each	Danforth(s) or other appropriate anchor
4 each	Stake(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 07/31/2008

NPS View from water into Sandy Point Cove



SE
N 48° 47' 20.71" W 122° 42' 55.98" WGS 84 07/31/2008 10:43:51 AM

image-1146: Overview of point from water.

No Image Available

Site Contact Information

Responsible party or alternate contact:
Sandy Point Marina, (W) 360-384-4373, marina contact for access

Closest Address:

Driving Directions:

Cannot Drive to Site

INTEROFFICE MEMORANDUM

TO: JEREMY FREIMUND, WATER RESOURCES MANAGER
FROM: KARA KUHLMAN, NATURAL RESOURCE ANALYST
SUBJECT: **BARLEAN'S FISHERY INC. FISH OIL SPILL ON SLATER ROAD, OCTOBER 15, 2013**
DATE: 10/15/13

The purpose of this memorandum is to summarize the response of the Water Resources Division on October 15, 2013 to what later was determined to be a fish oil spill that originated from Barlean's Fishery Inc at the intersection of Slater Road and Lake Terrell Road.

On October 15, 2013 at 11:48 am, Tim Johnson from the Phillips 66 petroleum oil refinery called Jeremy Freimund and reported that there was a yellowish fluid in a storm water drainage ditch along the north side of Slater Road and that it was also discharging through a culvert onto the Reservation on the south side of Slater Road. The material was first observed by the refinery staff at around 10:30 that morning during a regular inspection round and had not been observed during a similar inspection round at approximately 6:30 the previous evening. Tim Johnson reported that they had walked along the drainage ditch to try to determine the spill source and it appears that the material originated from the east side of Lake Terrell Road near Barlean's. Tim reported that the spill material had a paint-like odor, that Phillips66 staff members were collecting a sample, and that they had called the Washington Department of Ecology to report the finding. After discussing the situation with Tim Johnson, at approximately 12:00 noon you contacted Victor Johnson (Natural Resources Specialist I) and Hilary Consentino (Water Resources Technician III) to respond to the spill. Victor and Hilary were in Bellingham at the time having just dropped off water quality samples at Avocet after completing a pre-scheduled sampling run along Lummi Shore Road as part of the ambient water quality monitoring program.

Victor and Hilary arrived at the spill site at 12:30 pm, assessed the conditions, and called you to report their observations at about 1:00 pm. They confirmed that the spill originated in the drainage ditch along the north side of Slater Road near Barlean's Fishery Inc. (3660 Slater Rd.), continued downstream/westerly approximately ¼ mile, and passed through a culvert extending under Slater Road where Sample Site SW014 of the ambient water quality monitoring program is located. Hilary had followed the waterway approximately 200 feet downstream (south) to a point where the thick underbrush made it difficult to continue. The spilled material was observed to extend at least this far south. The spilled substance was thick, oily, brightly colored (red and yellow), and smelled like lemons (see pictures below). Pursuant to your direction Victor and Hilary deployed several absorbent pads from the Water Resources Division's truck spill kit to see if the spilled material was absorbed – they called you at about 1:40 pm to report that the oil liquid was being absorbed by the pads and that Phillips66 staff had also provided three sausage booms that were placed in the waterway and appeared to have brought a vac truck to remove the material from the north side of the ditch.

At approximately 1:50 pm you contacted Carl Anderson from the Department of Ecology Bellingham Field Office to determine if he was aware of the spill and was responding. Carl indicated that the spill had been reported and that he planned to follow-up and conduct a site visit.

At approximately 2:00 pm, you instructed Kara Kuhlman (Natural Resources Analyst) and Frank Lawrence III (Natural Resources Specialist I), to gather sausage boom from the spill response container and assist Victor and Hilary in boom deployment at a site further downstream, where Onion Creek, which the drainage ditch feeds into, enters Onion Bay. You attempted to contact the landowner whose property needed to be accessed in order to deploy boom at the downstream location but determined that the property owner (JB Finkbonner) had deceased as had his son.

Consequently, you directed Frank and Kara to access the site without land owner permission to respond to the spill. Responders accessed the site by walking along an unpaved road on private property. There was no evidence to indicate the spill had reached the site. Two sausage booms were deployed as a precautionary measure. The response from the Lummi Water Resources Division ended at approximately 3:00 pm.

At approximately 3:50 pm, Carl Anderson from the Department of Ecology called you to notify you that he was on-site and had met with representatives from Barlean's. Carl reported that Barlean's land applies fish oil and that there had apparently been an operational error. The spilled material was reportedly fish oil with a lemon extract. Barlean's had taken responsibility for the spill and you discussed disposal of the absorbent pads and sausage boom. Carl reported that we could deliver the used spill response material to Kevin at Barlean's and that they would handle disposal of the materials. You agreed that it made sense to leave the two sausage boom located near Onion Bay in place until after at least the next rainfall event. Carl called you again at approximately 5:50 pm and reported that Barlean's now planned to hire a contractor to fully clean up the site on October 16, 2013.

Upsteam culvert

Downstream culvert, north side of Slater Rd.

Downstream culvert, south side of Slater Rd.

Downstream culvert, south side of Slater Rd.

Onion Creek, near Onion Bay